

**IN THE CLAIMS:**

Please **AMEND** claim 1 and **ADD** claims 12-14. A copy of all pending claims and a status of the claims are provided below.

1. (Currently amended) A microplate liquid handling system comprising:

a main frame body;

a dispensing mechanism including a plurality of cylinders extending side by side and in parallel with each other by an even interval to provide a linear cylinder array, each cylinder having a nozzle and a plunger and ~~each a~~ dispensing tip being attachable to each nozzle for performing suction and discharge of liquid reagent or specimen through the dispensing tips by way of each plunger, each dispensing tip being detachably connectable to each nozzle;

a moving mechanism supported to the main frame body for moving the dispensing mechanism in X-axis, Y-axis, and Z-axis directions directed perpendicular to each other;

~~a microplate arranged in the main frame body having a plurality of wells arranged in an n x m matrix, the plurality of cylinders being provided in a number that is equal to the larger of n and m, and the liquid sucked into each dispensing tip being discharged into each well through each dispensing tip simultaneously with each other;~~

a first dispensing tip container configured to contain a matrix of n x m dispensing tips for permitting the nozzles to be attached with a first dispensing tip array oriented in the Y-axis direction, the first dispensing tip container having a longitudinal axis in parallel with the Y-axis direction;

a second dispensing tip container configured to contain a matrix of n x m dispensing tips for permitting the nozzles to be attached with a second dispensing tip array oriented in the X-axis direction, the second dispensing tip container having a lateral axis in parallel with the X-axis direction;

a first reagent vessel having a plurality of wells oriented in the Y-axis direction for storing a first reagent to be supplied to the dispensing tips of the first dispensing tip container; to store a reagent to be supplied to the dispensing tips of the cylinder array oriented in the Y-axis direction, the first reagent vessel arranged in a longitudinal axis parallel with the Y-axis direction; and

a second reagent vessel having a plurality of wells oriented in the X-axis direction for storing a second reagent to be supplied to the dispensing tips of the second dispensing tip container; and storing a reagent to be supplied to the dispensing tips of the cylinder array oriented in the X-axis direction, the second reagent vessel having a lateral axis in parallel with the X-axis direction.

a microplate arranged in the main frame body having a plurality of wells arranged in a matrix of  $n \times m$ , the first reagent being discharged in a plurality of wells oriented in the Y-axis direction and the second reagent being discharged in a plurality of wells oriented in the X-axis direction of the microplate.

2. (Original) The microplate liquid handling system as claimed in claim 1, wherein the first dispensing tip container, the second dispensing tip container, the first reagent vessel and the second reagent vessel are placed side by side in the main frame body and in the vicinity of the microplate.

3. (Original) The microplate liquid handling system as claimed in claim 1, wherein the dispensing mechanism further comprises a driving unit for moving the plungers up and down.

4. (Original) The microplate liquid handling system as claimed in claim 3, wherein the plurality of cylinders have vertical axes extending vertically, and wherein each nozzle is provided at each lower end of the cylinder and has a discharge hole opened vertically downwards, and

wherein each plunger is provided at each upper end of the cylinder, suction and discharge of liquid into and from each dispensing tip being effected upon vertical movement of each the plunger.

5. (Original) The microplate liquid handling system as claimed in claim 4, wherein the plurality of cylinders are provided in the number of twelve.

6. (Original) The microplate liquid handling system as claimed in claim 1, further comprising a rotating mechanism that rotates the dispensing mechanism by a predetermined angle about a vertically directed rotation axis for changing a direction of the array of the plurality of cylinders.

7. (Original) The microplate liquid handling system as claimed in claim 6, wherein the rotation axis is positioned in coincidence with a longitudinal center of the array of the plurality of cylinders.

8. (Original) The microplate liquid handling system as claimed in claim 6, wherein the dispensing mechanism is detachably provided to the rotating mechanism.

9. (Original) The microplate liquid handling system as claimed in claim 2, further comprising a thermomixer provided in the main frame body, the microplate being mountable on the thermomixer for imparting vibration to the microplate to promote stirring of the specimen and reagent in the wells while heating the wells to a predetermined temperature.

10. (Original) The microplate liquid handling system as claimed in claim 2, further comprising a cooler provided in the main frame body, the reagent vessel being

mountable on the cooler for maintaining the reagent at a predetermined cooling temperature.

11. (Original) The microplate liquid handling system as claimed in claim 1, wherein the microplate has a longitudinal side in parallel with the Y-axis, and a lateral side in parallel with the X-axis; and

wherein the dispensing mechanism comprises a first dispensing mechanism having a first cylinder array directing in the Y- axis, and a second dispensing mechanism having a second cylinder array directing in the X-axis, respective numbers of cylinders of the first cylinder array and the second cylinder array being provided in a number that is equal to the larger of n and m.

12. (New) A microplate liquid handling method utilizing a system comprising:

a main frame body;

a dispensing mechanism including a plurality of cylinders extending side by side and in parallel with each other to provide a linear cylinder array, each cylinder having a nozzle and each dispensing tip being attachable to each nozzle for performing suction and discharge of liquid reagent;

a moving mechanism supported to the main frame body for moving the dispensing mechanism in X-axis, Y-axis, and Z-axis directions directed perpendicular to each other;

a rotating mechanism that rotates the dispensing mechanism by a predetermined angle about a vertically directed rotation axis for changing a direction of the array of the plurality of cylinders;

a first and a second dispensing tip container each being configured to contain a n x m matrix of dispensing tips for permitting the nozzles to be attached;

a first reagent vessel having a plurality of wells oriented in the Y-axis direction for storing a first reagent;

a second reagent vessel having a plurality of wells oriented in the X-axis direction for storing a second reagent;

a microplate arranged in the main frame body having a plurality of wells arranged in a  $n \times m$  matrix, and

a dispensing tip disposal container;

wherein the method comprises the steps of:

moving the dispensing mechanism to the second dispensing tip container so that a first plurality of dispensing tips arranged in the X-axis direction are attached to the nozzles;

moving the dispensing mechanism to the second reagent vessel so that the second reagent is sucked into the first dispensing tips;

moving the dispensing mechanism to the microplate so that the second reagent is discharged into a plurality of wells arranged in the X-axis direction;

moving the dispensing mechanism to the first dispensing tip container;

rotating the dispensing mechanism so that a second plurality of dispensing tips arranged in the Y-axis direction are attached to the nozzles;

moving the dispensing mechanism to the first reagent vessel so that the first reagent is sucked into the second dispensing tips; and

moving the dispensing mechanism to the microplate so that the first reagent is discharged to a plurality of wells arranged in the Y-axis direction.

13. (New) A microplate liquid handling method as claimed in claim 12, further comprising a step of moving the dispensing mechanism to the dispensing tip disposal container to dispose the dispensing tips after each step of moving the dispensing mechanism to the microplate.

14. (New) A microplate liquid handling method utilizing a system comprising:

a dispensing mechanism including a plurality of cylinders, each cylinder having a nozzle;

the dispensing mechanism being movable in X-axis, Y-axis, and Z-axis directions and rotatable about the Z-axis;

a first dispensing tip container having a first plurality of dispensing tips and a second dispensing tip container having a second plurality of dispensing tips;

a first reagent vessel having a plurality of wells oriented in the Y-axis direction for storing a first reagent to be supplied to the dispensing tips of the first dispensing tip container;

a second reagent vessel having a plurality of wells oriented in the X-axis direction for storing a second reagent to be supplied to the dispensing tips of the second dispensing tip container; and

a microplate arranged in the main frame body having a plurality of wells arranged in a  $n \times m$  matrix,

the method comprising the steps of:

moving the dispensing mechanism from the second dispensing tip container by way of the second reagent vessel to the microplate so that the second agent is sucked into the second dispensing tips and discharged to the wells oriented in the Y-axis direction of the microplate;

rotating the dispensing mechanism by a predetermined amount of angle about the Z-axis; and

moving the dispensing mechanism from the first dispensing tip container by way of the first reagent vessel to the microplate so that the first agent is sucked into the first dispensing tips and discharged to the wells oriented in the X-axis direction of the microplate.